

REMARKS

Claims 1-8 and 10-39, all the claims pending in the application, stand rejected because the Office Action argues that the claimed invention is directed to non-statutory subject matter and upon informalities. Claims 1-8, 10-22, and 29-39 stand rejected on prior art grounds. Applicants respectfully traverse these rejections based on the following discussion.

I. The 35 U.S.C. §101 Rejection

Claims 1-8 and 10-39 stand rejected under 35 U.S.C. §101 because the Office Action argues that the claimed invention is directed to non-statutory subject matter. Specifically, the Office Action asserts that the claims present abstract method ideas in which no tangible steps are used or tangible results are produced.

Accordingly, Applicants have amended claims 1, 10, 17, 23, 29, and 33 to define that their respective method steps comprise "allocating said production starts". Therefore, claims 1, 10, 17, 23, 29, and 33, and their respective dependent claims, produce tangible results; and, are thus directed towards statutory subject matter under 35 U.S.C. §101. Further, Applicants note that the Board of Patent Appeals and Interferences has recently indicated that the USPTO's requirement that claims must state "technology" is in error (Ex Parte Lundgren, BPAI, October 5, 2005). In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

II. The Prior Art Rejections

Claims 1-8, 10-22, and 29-39 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yang, et al. (U.S. Patent No. 6,731,999), hereinafter referred to as Yang. Applicants respectfully traverse these rejections based on the following discussion.

The claimed invention provides a method of allocating production starts in a manufacturing facility using a production planning system. In the rejection, the Office Action argues that the claimed invention would have been obvious to one having ordinary skill in the art in view of Yang. However, Yang fails to teach or suggest that the output of a first stage is used to create constraints for a second stage. Instead, Yang sorts lots according to three rules, wherein each rule does not rely upon output from the other two rules. Therefore, as explained in greater detail below, Applicants respectfully submit that the prior art of record does not teach or suggest the claimed invention.

Applicants respectfully submit that Yang fails to teach or suggest that the output of the first stage is used to create constraints for the second stage. Such a feature is defined in independent claims 1, 10, 17, 23, 29, and 33 using the following language: “determining a portion of said additional constraints from output of said performing of said first stage of production planning”.

As noted in paragraph 81 of Applicants’ disclosure, FIG. 2 summarizes some steps of the invention. Block 200 determines the minimum number of starts required to be released into the manufacturing line in order to support the contractual obligation. This block considers both the nominal minimum starts specified in the contract as well as the foundry demand. The minimum starts output by block 200 are used as input by block

202. Block 202 determines the production plan that satisfies those minimum starts resulting from block 200. Subsequently, block 204 identifies any problems in satisfying the contractual requirements (e.g., if a capacity limitation prevents the satisfaction of demand).

Moreover, as noted in paragraph 0089 of Applicants' disclosure, FIG. 5 summarizes the major steps of block 202. The second stage LP run must consider the full set of demand which includes both foundry and non-foundry demand (ref. block 500). Therefore, when running the second stage LP, the invention removes the constraints created for the first stage run in blocks 304 and 306 (ref. block 502), restores the stability file to its original condition (ref. block 504), and most importantly, adds a constraint which ensures that the minimum starts established by block 200 are satisfied on a cumulative basis in the final production plan (ref. block 506).

Conversely, the method of Yang runs a linear program (LP) to determine what is termed "the max daily output", but really is the maximum release quantity for the day by technology. This is a manufacturing starts capacity (a limit as to how many pieces may be released that day by technology).

Further, Yang sorts lots according to their X-ratios, each of which indicates how fast the lot needs to move through the line in order to meet its due date. Lots are assigned in X-ratio sequence according to the following three steps (rules), applied sequentially until the day's capacity is full or until there are no eligible lots available.

First, rule 1 releases lots which will be late otherwise (i.e., those with an X-ratio below 3.8, where 3.8 was determined based on past experience (Yang, col. 4, lines 7-8

and 28-32)). Second, rule 2 releases lots which are needed to meet the lower bound constraints provided by customer requests (Yang, col. 4, lines 9-14). Next, rule 3 releases additional lots until capacity is full, except it does not bring in lots which would be started too early. Thus, Yang sorts lots according to three rules, wherein each rule does not rely upon output from the other two rules.

Therefore, Applicants respectfully submit that unlike the claimed invention, Yang fails to teach or suggest that the output of the first stage is used to create constraints for the second stage. Thus, it is Applicants' position that Yang does not disclose or suggest the claimed feature of "determining a portion of said additional constraints from output of said performing of said first stage of production planning" as defined by independent claims 1, 10, 17, 23, 29, and 33. As such, it is Applicants' position that the claimed invention is patentable over the prior art of record. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

III. The 35 U.S.C. §112, Second Paragraph, Rejection

Claims 1-8 and 10-39 stand rejected under 35 U.S.C. §112, second paragraph. The Office Action argues that, in claim 1, it is uncertain what stages are actually performed. Specifically, the Office Action asserts that it appears that if there is no contract that the first stage is not even required to be performed and/or if there are no contractually mandated minimum production starts constraints the first stage is not required either. The Office Action contends that the claim does not appear to positively recite that there are any contracts.

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As defined in independent claim 1, the method performs "a first stage of production planning to satisfy only contractually mandated minimum production starts constraints". Therefore, as defined in independent claim 1, "only contractually mandated minimum production starts constraints" are performed in the "first stage of production planning". Applicants submit that no further clarification is required in addition to the plain language set forth in claim 1. Furthermore, Applicants submit that the same reasoning is applicable to independent claims 10, 17, 23, 29, and 33.

The Office Action also argues that, in claim 3, it is uncertain as to what is meant by stability constraints or how are these different from fly generic constraints. As noted in paragraphs 0083-0084 of Applicants' disclosure, the stability constraints limit the amount of inventory held at a stocking point. Because the claims are read in light of the specification, the term "stability constraints" is clearly defined. Therefore, Applicants respectfully submit that claim 3 particularly points out and distinctly claims the subject matter which Applicants regard as the invention, in compliance with 35 U.S.C. § 112, second paragraph. Furthermore, Applicants submit that the same reasoning is applicable to dependent claims 12, 19, and 35.

In addition, the Office Action argues that in claim 5, it is uncertain as to the metes and bounds of the term "considers"; i.e., are the part numbers being used or is something else being claimed? Applicants have amended the claims to replace "considers" with "uses". Specifically, dependent claim 5 has been amended to define that the first stage of production planning *uses* part numbers, time periods and locations in the contractually mandated minimum production starts constraints. Further, dependent claims 14, 21, and

37 have been amended to define that the first stage of linear programming *uses* part numbers, time periods and locations in the contractually mandated minimum production starts constraints.

Because reasonable minds can differ on the definition of a particular word, the amendments to claims 5, 14, 21, and 37 are semantic changes that do not broaden or narrow the scope of the respective claims. Accordingly, the amendments to claims 5, 14, 21, and 37 particularly point out and distinctly claim the subject matter which Applicants regard as the invention, in compliance with 35 U.S.C. § 112, second paragraph, without altering the scope of the respective claims.

Furthermore, the Office Action argues that in claim 6 it is unclear how the first stage can ensure that the second stage meets the constraints; i.e., are the results from the first stage being used or is something else being performed? As defined in independent claim 1, the method comprises "performing a first stage of production planning to satisfy only contractually mandated minimum production starts constraints". Further, as defined in dependent claim 6, "said first stage of production planning ensures that said second stage of production planning will meet contractually mandated minimum production starts constraints."

Thus, because the contractually mandated minimum production starts constraints are satisfied in the first stage of production planning (as defined in independent claim 1), the first stage of production planning ensures that the second stage of production planning will meet the contractually mandated minimum production starts constraints (as defined in dependent claim 6). In other words, all of the contractually mandated

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minimum production starts constraints are satisfied by the time that the method performs the second stage, thereby ensuring that the second stage of production planning will meet the contractually mandated minimum production starts constraints. So to answer the Examiner's question, yes – the results from the first stage are being used to ensure that the second stage of production planning will meet the contractually mandated minimum production starts constraints. Furthermore, Applicants submit that the same reasoning is applicable to dependent claims 15 and 38.

Additionally, the Office Action argues that in claim 9, it is uncertain what the phrase "improves computerized line" means. Applicants have cancelled claim 9. Accordingly, Applicants have amended the claims to particularly point out and distinctly claim the subject matter which Applicants regard as the invention, in compliance with 35 U.S.C. § 112, second paragraph. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw these rejections.

IV. Formal Matters and Conclusion

With respect to the objection to the specification, the specification has been amended, above, as well as in our Preliminary Amendment filed on October 26, 2004, to overcome this objection. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the objection to the specification.

With respect to the rejections to the claims, the claims have been amended, above, to overcome these rejections. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections to the claims.

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In view of the foregoing, Applicants submit that claims 1-8 and 10-39, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary. Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-0456.

Respectfully submitted,

Dated: 4/12/06


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